Fig. 1 PRIOR ART

COMPRESSION PROCESSING

DI →

DCT TRANSFORMATION	→	QUANTIZATION	→

ENTROPY COMPRESSION

ADDITION OF EACH MARKER

CODING OF DC COMPONENT (HUFFMAN CODE)
CODING OF DC COMPONENT

→ DJ

EXPANSION PROCESSING

DETECTION OF EACH MARKER

ENTROPY EXPANSION

DECODING OF DC COMPONENT (HUFFMAN CODE)
DECODING OF DC COMPONENT

REVERSE QUANTIZATION	→	REVERSE DCT TRANSFORMATION	→ DR

Fig. 2A PRIOR ART

Y   Cb   Cr

ORIGINAL IMAGE DATA

SAMPLE RATIO 4:1:1

☐ 8×8 PIXELS=BLOCK

Fig. 2B PRIOR ART
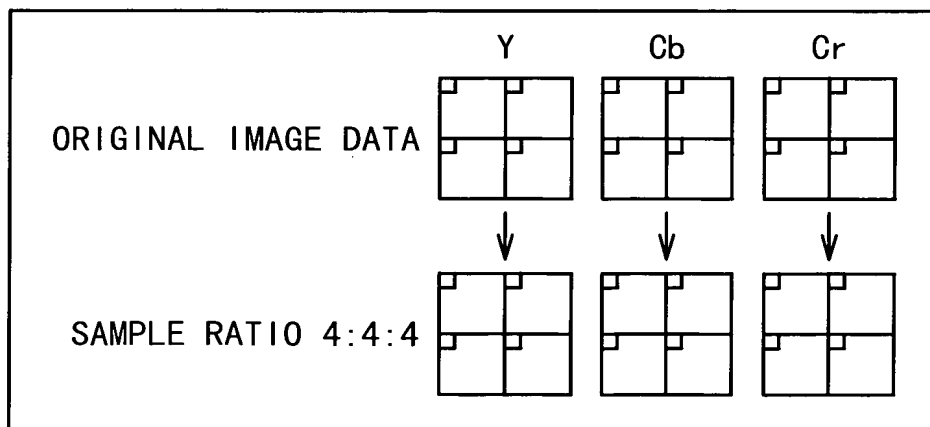
Y   Cb   Cr

ORIGINAL IMAGE DATA

SAMPLE RATIO 4:4:4

☐ 8×8 PIXELS=BLOCK

Fig. 3A
PRIOR ART

IMAGE

Fig. 3B
PRIOR ART

DC COEFFICIENT

AC COEFFICIENT

8 × 8 PIXELS=BLOCK

EACH ELEMENT
SAMPLE RATIO 4:4:4
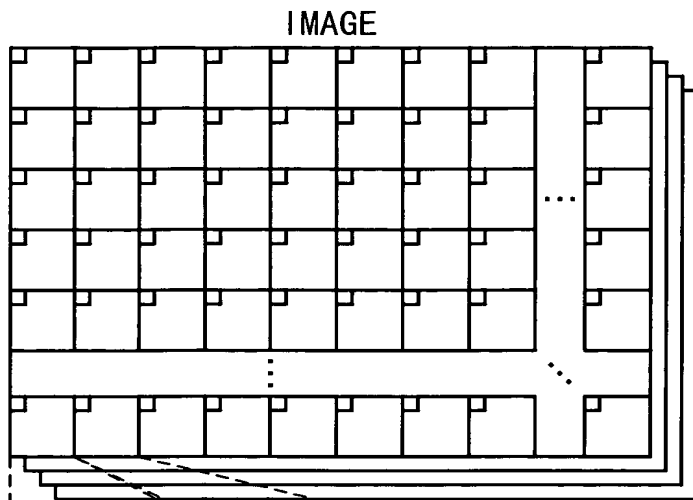
DIFFERENTIAL VALUE

①	2	6	7	15	16	28	29
3	5	8	14	17	27	30	43
4	9	13	14	26	31	42	44
10	12	19	25	32	41	45	54
11	20	24	33	40	46	53	55
21	23	34	39	47	52	56	61
22	35	38	48	51	57	60	62
36	37	49	50	58	59	63	64

①	2	6	7	15	16	28	29
3	5	8	14	17	27	30	43
4	9	13	18	26	31	42	44
10	12	19	25	32	41	45	54
11	20	24	33	40	46	53	55
21	23	34	39	47	52	56	61
22	35	38	48	51	57	60	62
36	37	49	50	58	59	63	64

Fig. 3C
PRIOR ART

Fig. 3D
PRIOR ART

Fig. 4A PRIOR ART

8bit

RSTn

RSTn (RST 0〜7)

0×FF 0×D0
〜
0×D7

Fig. 4B PRIOR ART

8bit

DRl	Lr	Ri

0×FF 0×D0 0×00 0×04 0×00 0×00
〜
0×FF 0×FF
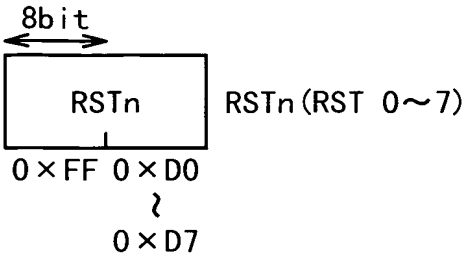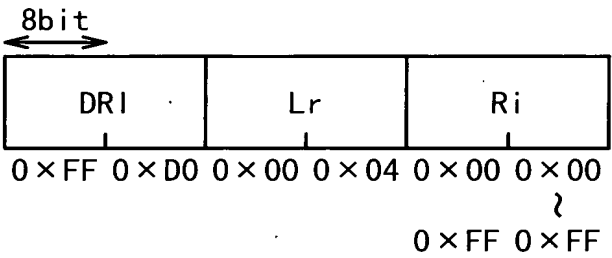
Fig. 4C PRIOR ART

0〜7 : RST0〜7

Fig. 5 PRIOR ART

1: SETTING REGISTER GROUP

HORIZONTAL SIZE SETTING REGISTER	11
INTERVAL SETTING REGISTER	12

DI

IMAGE COMPRESSION PROCESSING PORTION 2

DCT PORTION	QUANTIZATION PORTION	RST INSERTION PORTION
21	22	23
	ENTROPY COMPRESSION PORTION	
	24	

RST

MARKER PREPARATION PORTION 3

MARKER PREPARATING CIRCUIT 31

SQT
DQT
DHT

DRI

MARKER ADDITION PORTION 4

DJ

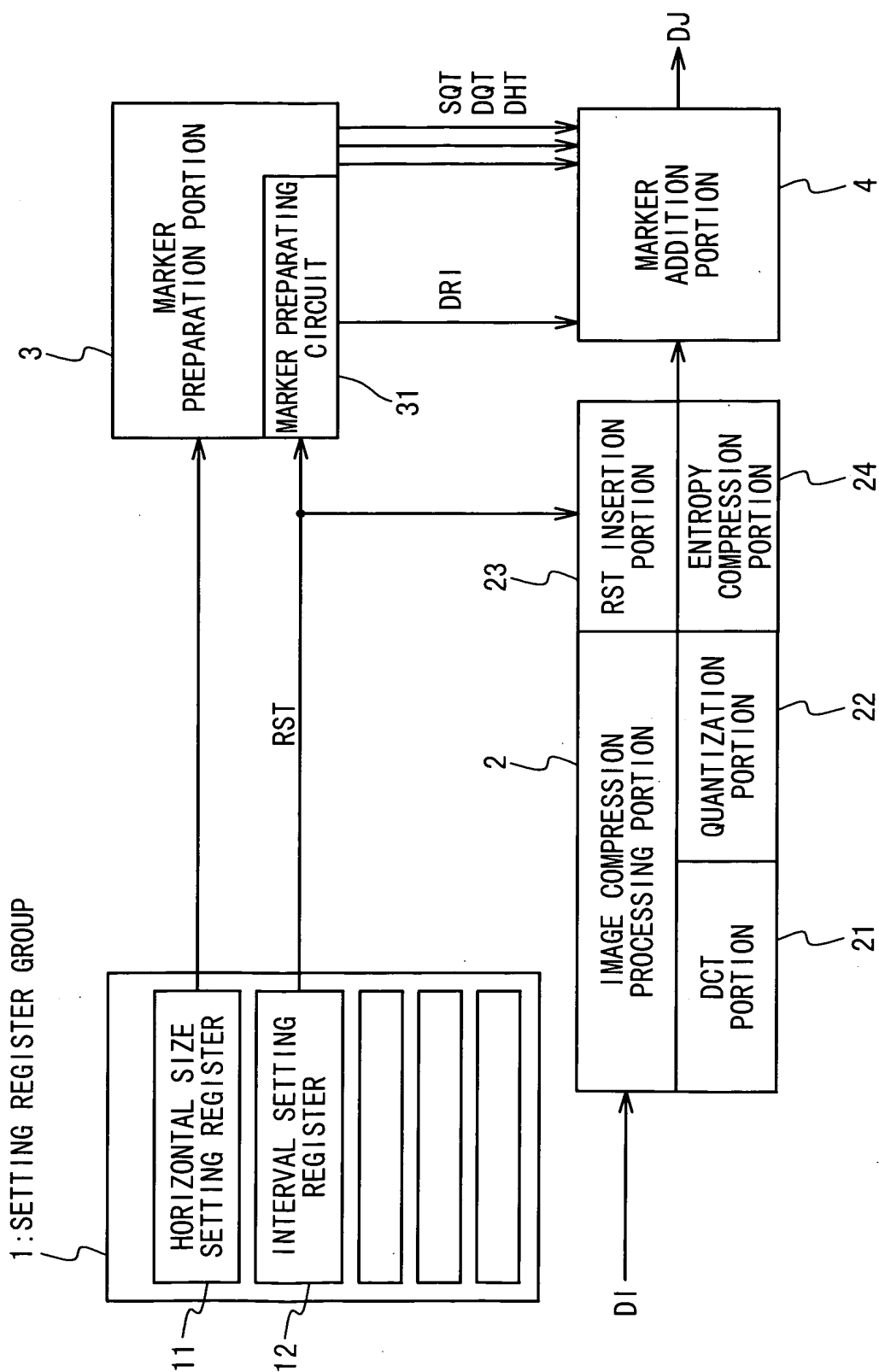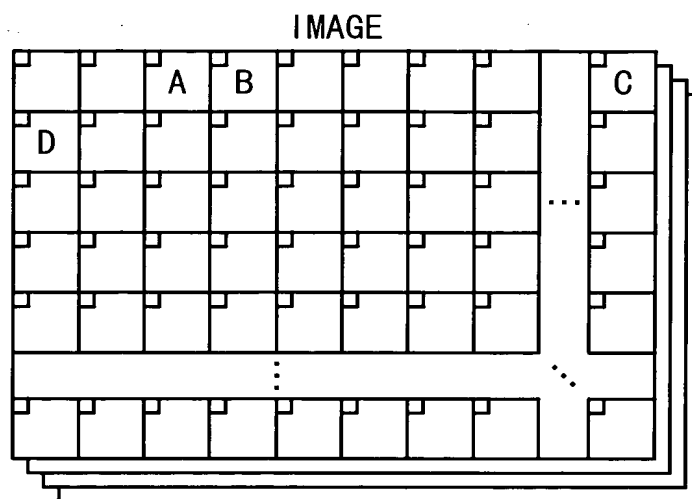# Fig. 6 PRIOR ART

IMAGE
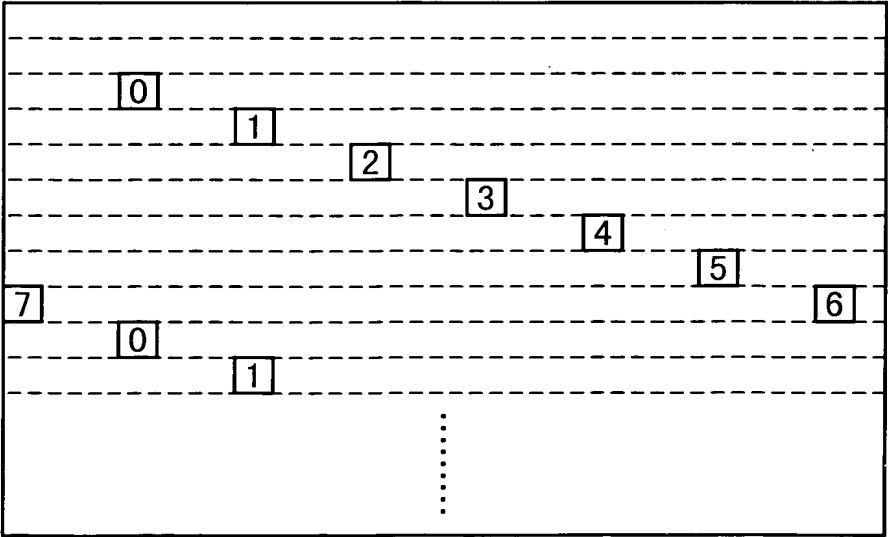
CORRELATION OF DC COEFFICIENT

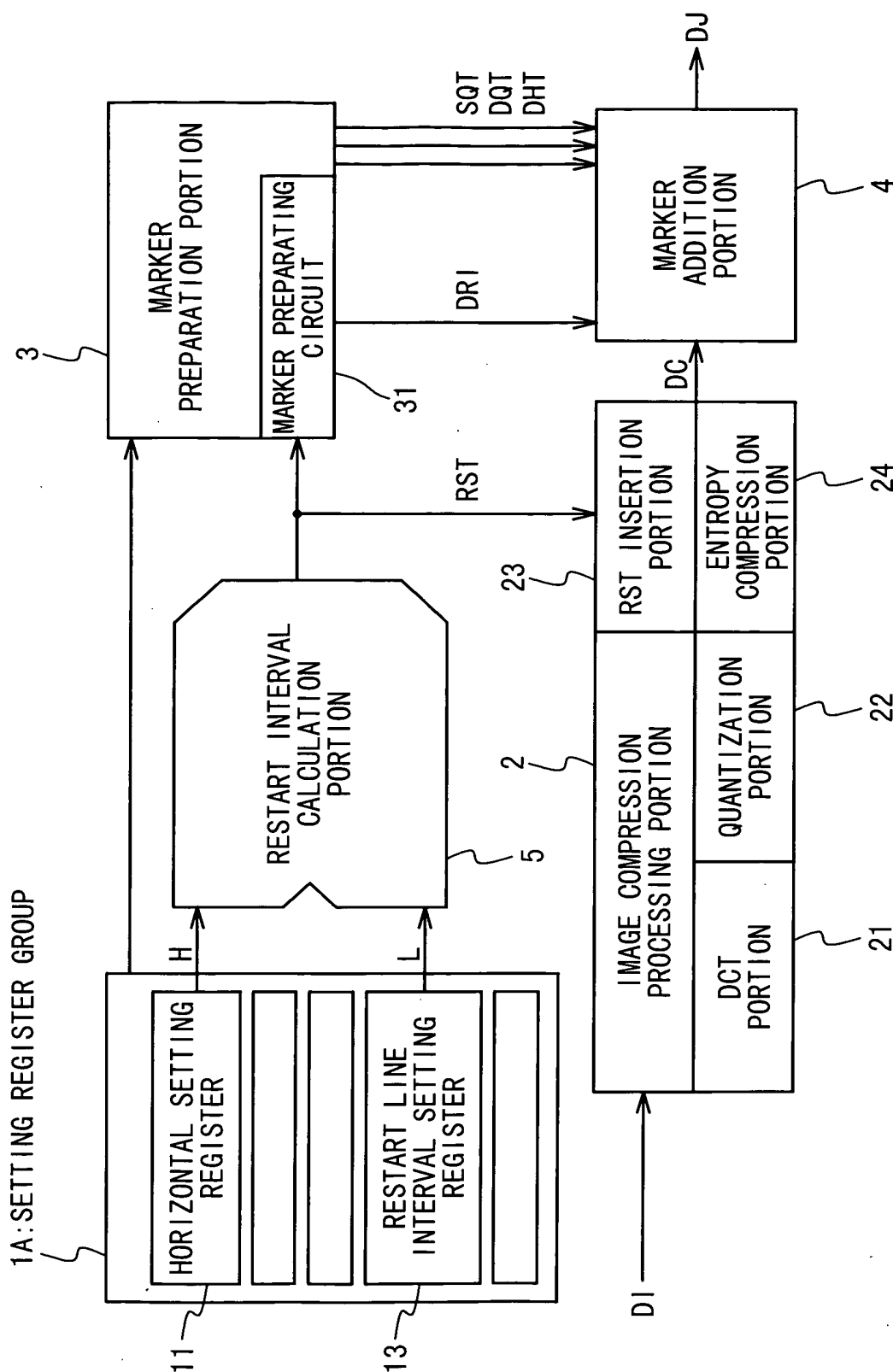A, B : HIGH CORRELATION
C, D : LOW CORRELATION

Fig. 7

Fig. 8A

0
1
2
3
4
5
6
7
0
1

0 ~ 7 : RST0～7

Fig. 8B

0

1

2

3

4

0 ~ 7 : RST0～7

Fig. 9

START

SET EACH REGISTER

IMAGE HORIZONTAL SIZE
SETTING REGISTER (H)   S1

RESTART LINE INTERVAL
SETTING REGISTER (L)

MCU UNIT
RESTART LINE INTERVAL
CALCULATION

$$\left(\begin{array}{l} H \div Mh = Hn \\ Hn \times L = Ri \end{array} \right)$$ S2

PREPARE EACH MARKER

DRI
SQT   S3
DRI
DRI

INCORPORATE IMAGE DATA   S4

DCT   S5

QUANTIZATION   S6

RST INSERTION   S7

ADD EACH MARKER
SQT
DQT   S8
DHT
DRI

END